Executive Summary

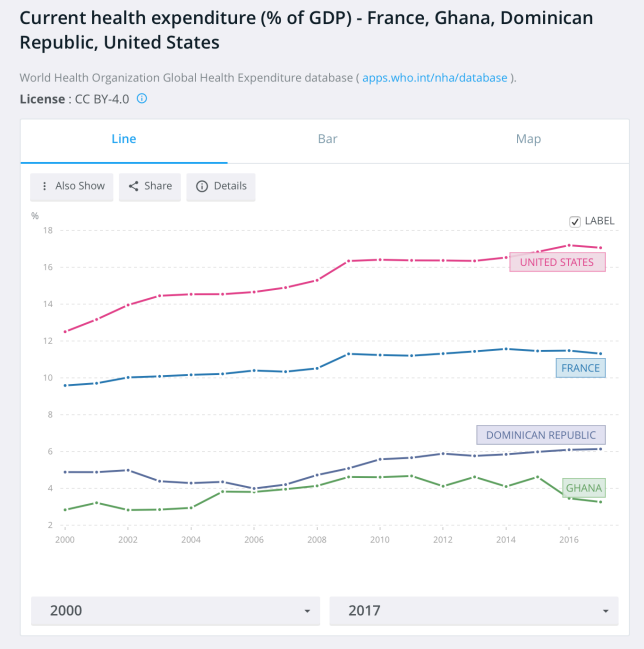
On March 11, 2020 the World Health Organization announced a global pandemic. According to the Center for Disease and Control (CDC), the novel coronavirus (COVID-19) has since affected 216 countries and territories,[1] infecting 14.7 million people and killing 611 thousand.[2] However, not every country has been affected to the same degree. For example, the United Kingdom, with a population of 66.7 million,[3] makes up a large percentage of COVID-19 cases with 295 thousand reported cases and 45 thousand deaths.[4] Yet, Vietnam, whose population consists of over one third of the United Kingdom's at 96.4 million,[5] only has 383 cases and no deaths.[6]

This begs the question of how two countries with tens of millions of people ended up with such different numbers. Furthermore, it begs the question of how the United States can learn from other countries and act differently to become better prepared for a health crisis such as COVID-19. This policy memo aims for a comparative approach of understanding. By looking at health infrastructure and indicators, we will compare and contrast the United States with France, the Dominican Republic, and Ghana in order to evaluate state's capacity in handling a global pandemic. Specifically, we seek to evaluate the impact of universal healthcare during crisis. Our country selection is based on two countries with universal healthcare, France and Ghana, and two without, the United States and the Dominican Republic. Furthermore, to try and adjust for economic confounders, we used the UN country classification and selected two developing

[1] https://www.cdc.gov/coronavirus/2019-ncov/global-covid-19/index.html
[2] https://ourworldindata.org/coronavirus
[3] https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates
[4] https://www.nytimes.com/interactive/2020/world/europe/united-kingdom-coronavirus-cases.html
[5] https://data.worldbank.org/indicator/SP.POP.TOTL?locations=VN
[6] https://ourworldindata.org/covid-exemplar-vietnam

countries, the Dominican Republic and Ghana, and two developed countries, France and the United States. Moving forward, we recommend the US adopt a national healthcare scheme.

Comparing Countries Pre-COVID-19

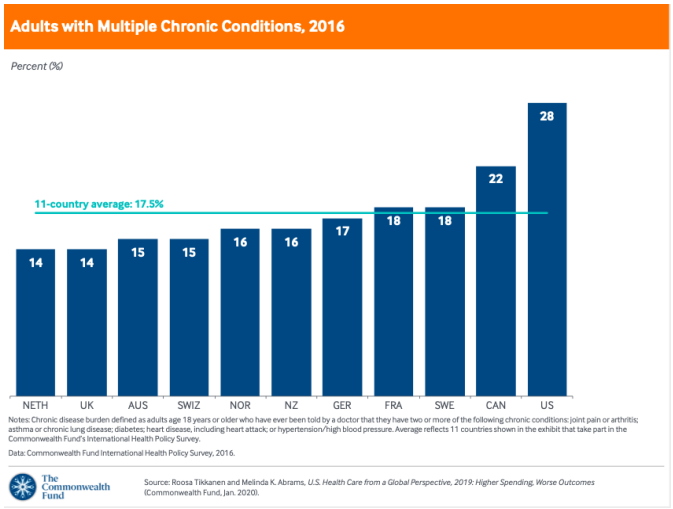


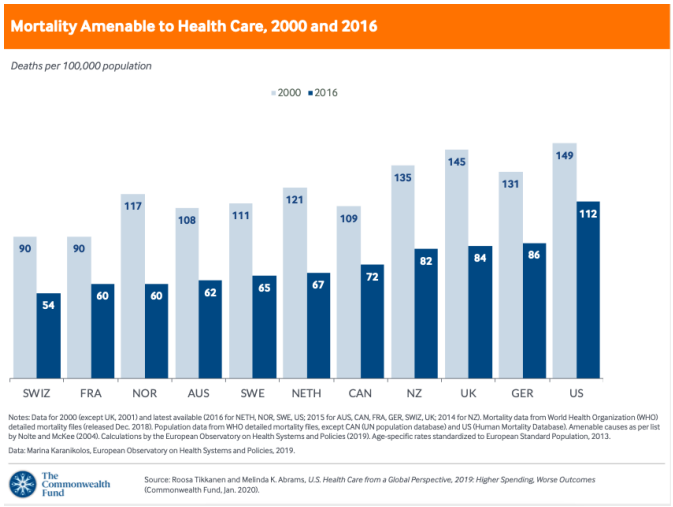
Looking to health expenditure as a percentage of GDP is the most intuitive way of thinking about healthcare infrastructure. If operating under the assumption that the more a country spends, the better their healthcare system is, and consequently the more prepared they are in facing crisis like a pandemic, then it would seem fair to say that the United States should be able to control the pandemic. However, we know this not to be the case. Therefore, it seems that spending is not properly indicative of how equipped a country is in handling health crises.

The mortality rate from COVID-19 is a significant indicator of how well a country is doing in terms of controlling the spread of the novel coronavirus and providing necessary health care to its population. In this data analysis, we raised the question of whether a country has a universal healthcare system or not has an impact on the chances of survival for COVID-19 patients. Due to a lack of consensus among the academic community over how to best calculate mortality rates, we decided to use daily deaths as a proxy. Even though the number of daily deaths cannot be proven to be causally linked to the quality of healthcare, the trend over time can provide insight into how well the system is providing care to patients.

The United States of America

When looking at developed countries, members of the OECD specifically, we can see that





overall the US has an issue in the healthcare sector.

Compared to the rest of the OECD the US has the lowest life expectancy. Similarly, the US has the most adults with multiple chronic illnesses, with 28% of the adult population falling into that category. With all this in mind, Americans still pay the most for their health insurance and have the highest rates of preventable deaths. The United States is one of the very few developed countries to not provide universal health care for its citizens and given the numbers the country is suffering. In light of the COVID-19 pandemic, we are drawn to also looking at how healthcare infrastructure impacts individuals in everyday settings and how this may be compounded during crises.

France

Unlike the US, France has a universal health care system, largely financed by the government. The French government generally refunds patients 70% of most health care costs,

and 100% in the case of costly or long-term ailments. Even though France spent only 11.3% of GDP on healthcare in 2017, much less than the US (17%), its population is much healthier. The mortality rate for deaths that were preventable by timely and effective care in France is 0.06%, while this figure for the US is almost twice as much, at 1.12%.

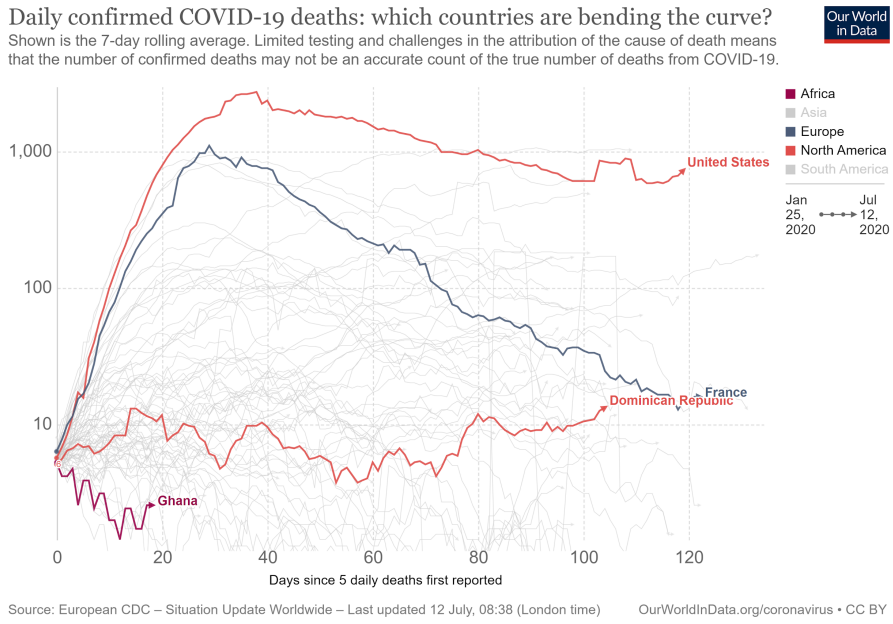
The Dominican Republic

We also consider the way developing countries have been affected during this pandemic, and we will be using The Dominican Republic as one of the case studies. The Dominican Republic has a three-tiered social security type of health care system. The people who are in the lowest income bracket are given basic healthcare by the government but are very limited. The second tier also receives coverage through employment, but it is only extended to an individual worker and their spouse. The final tier of the population is responsible for their own insurance through private companies.

Ghana

Ghana has a universal health care system, known as the National Health Insurance Scheme (NHIS). Before the establishment of the NHIS in 2003, many people died because they couldn't afford to pay for their healthcare needs when they were ill. The NHIS covers about 95% of diseases in Ghana including malaria, diarrhea, and asthma. 70% of revenues to finance NHIS comes from a value added tax on goods and services and 23% from a portion of social security taxes from formal sector workers. It was found that on average individuals enrolled in the insurance scheme are significantly more likely to obtain prescriptions, visit clinics, and seek formal health care when sick. This indicates that the NHIS' objective to increase access to the formal health care sector through health insurance was increased.

COVID 19 Data



Looking at rate of growth of the daily confirmed COVID-19 deaths allows us to compare the progress countries have made in bending the curves and reducing the mortality rates. The x-axis is the number of days since the first day the country reported 5 daily deaths and the y-axis is the logarithm of the daily new deaths. Both the United States and France saw an upward trend in daily deaths up to Day 40 and Day 30, respectively, since the countries first reported 5 daily deaths, signaling the beginning of the outbreak when countries were still struggling to strategize and healthcare facilities were likely overwhelmed. The steeper slope for the US indicates that the number of COVID-19 deaths was increasing at a much faster rate relative to France. After this upward trend, both countries started to see the rate of change in the number of daily deaths going down. Even though France has a higher percentage of the population over 65 than the US (17% and 15% respectively), one of the major indicators of mortality rates from COVID-19, the downward trend for the former is much steeper than for the latter. Given that France had a slow

response and critical missteps in the early days of the outbreak, similar to the US, it seems that this observation likely indicates a lower quality and capacity of the healthcare system in the US.

In terms of developing countries, Ghana's number has been going down significantly, but nothing concrete could be concluded because the time frame observed is not as long as that of other countries. Meanwhile, Dominican Republic's number has seen a slightly upward trend, with fluctuations in between. This likely indicates that despite a relatively significant time since the first 5 daily deaths, the country still has not been able to take control of the situation.

The graph sheds light on how two countries with universal healthcare (France and Ghana) have both outperformed their counterparts that lack universal healthcare (the US and Dominican Republic) in terms of daily confirmed COVID-19 deaths. However, this metric still has some limitations, especially in the developing world. Daily deaths could be underreported because of a lack of testing leading to the inability to confirm COVID-19 cases. Additionally, the ability for countries to "bend the curve" is confounded by factors other than its healthcare system, such as its lockdown policies, population sizes, and density. For example, in reconsidering our introduction's example in the drastic difference in case numbers between the United Kingdom and the Vietnam, Vietnam has been praised for its early lockdown policies. Before the WHO declared a global pandemic, Vietnam was already tracking cases and shutting down travel. Furthermore, as we have seen in the US, the virus thrives in locations with high population density, like New York.

These factors are important to take into account when discussing the impacts of the novel coronavirus. However, in the current times of globalization, such a viral disease is inescapable. It is still critical to evaluate the healthcare systems in place, for it is the primary mechanism to treating people when the virus inevitably spreads.

Recommendation:

The results of our analysis highlight the need for a national healthcare system and the enormous human and economic benefit such a system provides. Because of this, we recommend significant investment by the US government in pursuit of a nationalized healthcare scheme. While this analysis has been limited to a handful of countries, it has objectively shown that stronger healthcare infrastructure reduces mortality rates both during and outside of pandemic events, while reducing economic costs.

Healthcare is a question of national risk. Systemic lack of access to quality healthcare leads to a lower life expectancy, higher rates of chronic illness, and higher relative expenditure on health expenses as a nation. By tackling this issue head on, the US can better position itself economically while reducing loss of life. The lack of a national health care scheme harms individual citizens by disincentivizing preventative care and care for minor illnesses with chances for complications. This leads to higher rates of more severe illness, which hurt both individual citizens and national regimes. To reduce this cost as a percent of GDP by reducing the aggregate risk to citizens, the US can better position itself to compete on the world stage.

The primary challenge in nationalizing healthcare in the US is political. In the US, expansion of social welfare programs is often difficult due to the partisan perception of these programs. In many ways an extensive healthcare program would be considered a non-starter. However in light of the Covid-19 pandemic, there is a chance public opinion could be swayed towards support if trust was maintained in the federal government by a majority of citizens.

Another significant challenge is the federalization of medical services. The most feasible US outcome would look much like the dual service system of the UK, where citizens have a public access option through the NHS or can go to private medical centers if they so choose. In

the short run this is not possible, but there are tools to move the US towards this direction. An insurance mandate similar to the affordable care act would guarantee more equitable access during the transition. While payment schedules for services rendered, combined with medical job pipelines to ensure a steady workforce of practitioners can both contribute to and ensure stable markets in healthcare. While the creation of a new system is not a simple task, the advantages are too great to pass up.

Conclusion:

Our policy recommendation alone will not completely prevent global health crises; in fact, it is meant as a protection so that we can be prepared to adequately address the strains that are put on the health system once another crises does emerge. Combined with conscientious policy with lockdown measures and social distancing, our proposal will ensure that we are better equipped to keep our numbers down and our people safe, healthy, and alive.